# BRUHATH BANGALORE MAHANAGARA PALIKE

| | | |
|---|---|---|
| Name of the Agency | : | **Technical Manager,** KRIDL, Bangalore. |
| Name of the Work | : | Improvements to Main & Cross Roads in Venkateshwara Layout, Gurunanjaiah Layout, Anjaneya Layout, at Abbigere, in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore. |
| Estimate Cost | : | Rs. |

## QUALITY CONTROL REPORTS TO

**Asst. Executive Engineer,**
**Shettyhalli Sub Division,**
**Dasarahalli Zone,**
**BBMP, Bangalore.**


## CIVIL-TECH CONSULTANTS & ENGINEERS

**Building & Highway Material Testing Laboratory**
**NABL ACCREDITED LABORATOTY AS PER ISO / IEC – 17025:2005**
**No.23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara,**
**Basaveshwaranagar, Bangalore – 560 079.**

# CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory
An ISO 9001:2008 Certified Company
**NABL** - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED


Job No.: CTCE/BBMP/W.No.12/KRIDL/WMM/S-T/2014-15 15.07.2014

## DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

| | |
|---|---|
| Client | **Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore. |
| Agency | **Technical Manager (West),** KRIDL, Bangalore. |
| Name of Work | Improvements to Main & Cross Roads in Venkateshwara Layout, Gurunanjaiah Layout, Anjaneya Layout, at Abbigere, in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore. |
| Reference | BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014 |
| Technical Reference | IS 2386(Part 1) 1963 (RA 2011) |
| Type of Mix | Wet Mix Macadam |
| Date of Testing | 15.07.2014 |

Result : Flakiness Index = **11.85%**

Elongation Index = **13.20%**

**Result : Combined Flakiness & Elongation index 25.05%**

**Comments:**

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

**Note:**

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4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

AE/2

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಶೆಟ್ಟಿಹಳ್ಳಿ ಉಪವಿಭಾಗ, ದಾಸರಹಳ್ಳಿ ವಲಯ
ಬೃಹತ್ ಬೆಂ
ಬಿಬಿಎಂಪಿ, ಬೆಂಗಳೂರು.

# CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

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JAS-ANZ BSCIC ISO 9001 REGISTERED


Job No.: CTCE/BBMP/W.No.12/KRIDL/WMM/S-T/2014-15 15.07.2014

## DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

| | |
|---|---|
| Client | **Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore. |
| Agency | **Technical Manager (West),** KRIDL, Bangalore. |
| Name of Work | Improvements to Main & Cross Roads in Venkateshwara Layout, Gurunanjaiah Layout, Anjaneya Layout, at Abbigere, in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore. |
| Reference | BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014 |
| Technical Reference | IS 2386(Part 1) 1963 (RA 2011) |
| Type of Mix | Wet Mix Macadam |
| Date of Testing | 15.07.2014 |

Civil-Tech Consultants & Engineers Bangalore

Result : Flakiness Index = **12.02%**

Elongation Index = **13.65%**

**Result : Combined Flakiness & Elongation index 25.67%**

**Comments:**

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

**Note:**

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AE12

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಶೆಟ್ಟಿಹಳ್ಳಿ ಉಪವಿಭಾಗ, ದಾಸರಹಳ್ಳಿ ವಲಯ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
(ಆಸ್.ಎಂ. ರಸ್ತೆ, ಶಿವಣ್ಣನಗರ, ಬೆಂಗಳೂರು.

**M/s. Civil-Tech Consultants & Engineers**
**# 23/14, 7th Cross, 3rd Stage,**
**4th Block, Shakthiganapathinagara,**
**Basaveshwaranagar,**
**Bangalore-560079.**

# QUALITY CONTROL REPORTS FOR

# BITUMINOUS CONCRETE

# CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

**NABL** - Accredited Laboratory as per ISO / IEC-17025 : 2005


Job No.: CTCE/BBMP/W.No.12/KRIDL/QB(BC)/2014-15 04.08.2014

## TEST REPORT ON DETERMINATION OF BITUMEN CHARACTERISTICS

| | | |
|---|---|---|
| **CLIENT** | : | **Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore. |
| **AGENCY** | : | **Technical Manager (West),** KRIDL, Bangalore. |
| **NAME OF THE WORK** | : | Improvements to Main & Cross Roads in Venkateshwara Layout, Gurunanjaiah Layout, Anjaneya Layout, at Abbigere, in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore. |
| **REFERENCE** | : | BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014 |
| **SOURCE OF LOCATION** | : | Hot mix Plant, Bangalore |
| **DATE OF TESTING** | : | 04.08.2014 |

The results of the tests conducted on the bitumen sample.

| Sl. No | Description | Test Method as per IS | Test Result | Requirement as per IS:73:2013 |
|---|---|---|---|---|
| 1 | Penetration at 25 $^0$C, 1/10 mm | IS :1203 -1978 (RA-2009) | 66 | 60 to 70 |
| 2 | Softening point, $^0$C | IS :1205 -1978 (RA-2009) | 43 | Min. 45 |
| 3 | Ductility at 27$^0$C, cm | IS :1208 -1978 (RA-2009) | 100 > | Min. 50 |
| 4 | Flash Point, $^0$C | IS :1209 -1978 (RA-2009) | 296 | Min. 220 |

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AE(2)

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು

ಕಬ್ಬಿಹಳ್ಳಿ ಉಪವಿಭಾಗ ಸಾಧನಕಳ್ಳಿ ವಲಯ

ಬೃಹತ್ ಬೆಂ

ಎಸ್.ಎಂ ಕೃಷ್ಣ ... ಬೆಂಗಳೂರು

**M/s. Civil-Tech Consultants & Engineers**

**# 23/14, 7th Cross, 3rd Stage,**
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# CIVIL-TECH CONSULTANTS AND ENGINEERS

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Job No.: CTCE/BBMP/W.No.12/KRIDL/BC/AIV/2014-15

04.08.2014

## Aggregate Impact Value

IS: 2386 Part IV

| | |
|---|---|
| **Client** | **Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore. |
| **Agency** | **Technical Manager (West),** KRIDL, Bangalore. |
| **Name of the Work** | Improvements to Main & Cross Roads in Venkateshwara Layout, Gurunanjaiah Layout, Anjaneya Layout, at Abbigere, in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore. |
| **Reference** | BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014 |
| **Source / Location** | Hot Mix Plant, Bangalore |
| **Type of Mix** | Bituminous Concrete |
| **Date of Testing** | 04.08.2014 |

| Sl No. | Details | Trial No. | | Average |
|---|---|---|---|---|
| | | 1 | 2 | |
| 1 | Total weight of aggregate sample filling the cylindrical measure = $W_1$ g | 378 | 379 | |
| 2 | Weight of agregate passing 2.36 mm sieve after the test = $W_2$ g | 78 | 79 | |
| 3 | Weight of aggregate retained 2.36 mm sieve after the test = $W_3$ g | 300 | 300 | |
| 4 | Aggregate Impact value = percent fines<br>100* ($W_2/W_1$) percent | 20.63 | 20.84 | 20.74 |

Comments:

→ Maximum allowable Aggregate Impact value for Bituminous Concrete is 24%

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ಪೆಬ್ಬಿಕಲ್ಲು ಉಪವಿಭಾಗ, ಸಾಲಮಟ್ಟ ವಲಯ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಪಾಲಿಕೆ
ಶ್ರೀ.ಎಂ ರಸ್ತೆ ರಾಜಾಜಿನಗರ, ಬೆಂಗಳೂರು.

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Job No.: CTCE/BBMP/W.No.12/KRIDL/BC/AIV/2014-15

04.08.2014

## Aggregate Impact Value

IS: 2386 Part IV

| | |
|---|---|
| **Client** | **Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore. |
| **Agency** | **Technical Manager (West),** KRIDL, Bangalore. |
| **Name of the Work** | Improvements to Main & Cross Roads in Venkateshwara Layout, Gurunanjaiah Layout, Anjaneya Layout, at Abbigere, in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore. |
| **Reference** | BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014 |
| **Source / Location** | Hot Mix Plant, Bangalore |
| **Type of Mix** | Bituminous Concrete |
| **Date of Testing** | 04.08.2014 |

| Sl No. | Details | Trial No. | | Average |
|---|---|---|---|---|
| | | 1 | 2 | |
| 1 | Total weight of aggregate sample filling the cylindrical measure = $W_1$ g | 380 | 381 | |
| 2 | Weight of agregate passing 2.36 mm sieve after the test = $W_2$ g | 80 | 81 | |
| 3 | Weight of aggregate retained 2.36 mm sieve after the test = $W_3$ g | 300 | 300 | |
| 4 | Aggregate Impact value = percent fines | | | |
| | 100* ($W_2/W_1$) percent | 21.05 | 21.26 | **21.16** |

Comments:

→ Maximum allowable Aggregate Impact value for Bituminous Concrete is 24%

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ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
ಎಸ್.ಎಂ ರಸ್ತೆ, ಶಿವಾಜಿನಗರ, ಬೆಂಗಳೂರು.

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Job No.: CTCE/BBMP/W.No.12/KRIDL/BC/AIV/2014-15

04.08.2014

## Aggregate Impact Value

IS: 2386 Part IV

| | |
|---|---|
| **Client** | **Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore. |
| **Agency** | **Technical Manager (West),** KRIDL, Bangalore. |
| **Name of the Work** | Improvements to Main & Cross Roads in Venkateshwara Layout, Gurunanjaiah Layout, Anjaneya Layout, at Abbigere, in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore. |
| **Reference** | BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014 |
| **Source / Location** | Hot Mix Plant, Bangalore |
| **Type of Mix** | Bituminous Concrete |
| **Date of Testing** | 04.08.2014 |

| Sl No. | Details | Trial No. | | Average |
|---|---|---|---|---|
| | | 1 | 2 | |
| 1 | Total weight of aggregate sample filling the cylindrical measure = $W_1$ g | 377 | 378 | |
| 2 | Weight of agregate passing 2.36 mm sieve after the test = $W_2$ g | 77 | 78 | |
| 3 | Weight of aggregate retained 2.36 mm sieve after the test = $W_3$ g | 300 | 300 | |
| 4 | Aggregate Impact value = percent fines<br>100* ($W_2/W_1$) percent | 20.42 | 20.63 | **20.53** |

Comments:

→ Maximum allowable Aggregate Impact value for Bituminous Concrete is 24%

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ಎಸ್.ಎಂ. ಕೃಷ್ಣಾ ನಗರ, ಬೆಂಗಳೂರು.

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Job No.: CTCE/BBMP/W.No.12/KRIDL/BC/AIV/2014-15

04.08.2014

## Aggregate Impact Value

IS: 2386 Part IV

| | |
|---|---|
| **Client** | **Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore. |
| **Agency** | **Technical Manager (West),** KRIDL, Bangalore. |
| **Name of the Work** | Improvements to Main & Cross Roads in Venkateshwara Layout, Gurunanjaiah Layout, Anjaneya Layout, at Abbigere, in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore. |
| **Reference** | BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014 |
| **Source / Location** | Hot Mix Plant, Bangalore |
| **Type of Mix** | Bituminous Concrete |
| **Date of Testing** | 04.08.2014 |

| Sl No. | Details | Trial No. | | Average |
|---|---|---|---|---|
| | | 1 | 2 | |
| 1 | Total weight of aggregate sample filling the cylindrical measure = $W_1$ g | 385 | 386 | |
| 2 | Weight of agregate passing 2.36 mm sieve after the test = $W_2$ g | 85 | 86 | |
| 3 | Weight of aggregate retained 2.36 mm sieve after the test = $W_3$ g | 300 | 300 | |
| 4 | Aggregate Impact value = percent fines<br>100* ($W_2/W_1$) percent | 22.08 | 22.28 | 22.18 |

Comments:

→ Maximum allowable Aggregate Impact value for Bituminous Concrete is 24%

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JAS-ANZ BSCIC ISO 9001 REGISTERED


Job No.: CTCE/BBMP/W.No.12/KRIDL/BC/Shape.T/2014-15 : 05.08.2014

## DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

| | |
|---|---|
| Customer | : **Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore. |
| Agency | : **Technical Manager (West),** KRIDL, Bangalore. |
| Name of Work | : Improvements to Main & Cross Roads in Venkateshwara Layout, Gurunanjaiah Layout, Anjaneya Layout, at Abbigere, in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore. |
| Reference | : BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014 |
| Technical Reference | : IS 2386(Part 1) 1963 (RA 2007) |
| Type of Mix | : Bituminous Concrete |
| Date of Testing | : 05.08.2014 |

Result : Flakiness Index = **12.25%**

Elongation Index = **13.05%**

Result : Combined Flakiness & Elongation index **25.30%**

Comments:

→ Maximum allowable Flakiness & Elongation Index for Dense Graded Bituminous Macadam is 30%

Note:

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ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
ಎಸ್.ಎಂ ರಸ್ತೆ, ರಾಜಾಜಿನಗರ, ಬೆಂಗಳೂರು

# CIVIL-TECH CONSULTANTS AND ENGINEERS

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JAS-ANZ BSCIC ISO 9001 REGISTERED


Job No.: CTCE/BBMP/W.No.12/KRIDL/BC/Shape.T/2014-15 : 05.08.2014

## DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

| | |
|---|---|
| Customer | : **Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore. |
| Agency | : **Technical Manager (West),** KRIDL, Bangalore. |
| Name of Work | : Improvements to Main & Cross Roads in Venkateshwara Layout, Gurunanjaiah Layout, Anjaneya Layout, at Abbigere, in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore. |
| Reference | : BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014 |
| Technical Reference | : IS 2386(Part 1) 1963 (RA 2007) |
| Type of Mix | : Bituminous Concrete |
| Date of Testing | : 05.08.2014 |

Result : Flakiness Index = **11.92%**

Elongation Index = **13.26%**

Result : Combined Flakiness & Elongation index **25.18%**

Comments:

→ Maximum allowable Flakiness & Elongation Index for Dense Graded Bituminous Macadam is 30%

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ಬೃಹತ್ ಬೆಂಗಳೂರು ನಗರಪಾಲಿಕೆ
ಎಸ್.ಎಂ ರಸ್ತೆ, ಬೆಂಗಳೂರು.

*QUALITY CONTROL REPORTS FOR*

**GRANUALAR SUB BASE (GSB)**

# CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

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JAS-ANZ BSCIC ISO 9001 REGISTERED


Job No.: CTCE/BBMP/W.No.12/KRIDL/BC/Shape.T/2014-15 : 05.08.2014

## DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

| | |
|---|---|
| Customer | : **Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore. |
| Agency | : **Technical Manager (West),** KRIDL, Bangalore. |
| Name of Work | : Improvements to Main & Cross Roads in Venkateshwara Layout, Gurunanjaiah Layout, Anjaneya Layout, at Abbigere, in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore. |
| Reference | : BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014 |
| Technical Reference | : IS 2386(Part 1) 1963 (RA 2007) |
| Type of Mix | : Bituminous Concrete |
| Date of Testing | : 05.08.2014 |

Result : Flakiness Index = **11.28%**

Elongation Index = **13.05%**

Result : Combined Flakiness & Elongation index **24.33%**

Comments:

→ Maximum allowable Flakiness & Elongation Index for Dense Graded Bituminous Macadam is 30%

Note:

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⇒ Any Query regarding the report must be reported within 30 days from the date of testing.

AE12

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು

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M/s. Civil-Tech Consultants & Engineers

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Job No.: CTCE/BBMP/W.No.12/KRIDL/BC/Shape.T/2014-15 : 05.08.2014

## DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

| | |
|---|---|
| Customer | : **Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore. |
| Agency | : **Technical Manager (West),** KRIDL, Bangalore. |
| Name of Work | : Improvements to Main & Cross Roads in Venkateshwara Layout, Gurunanjaiah Layout, Anjaneya Layout, at Abbigere, in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore. |
| Reference | : BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014 |
| Technical Reference | : IS 2386(Part 1) 1963 (RA 2007) |
| Type of Mix | : Bituminous Concrete |
| Date of Testing | : 05.08.2014 |

Result : Flakiness Index = **11.36%**

Elongation Index = **13.20%**

Result : Combined Flakiness & Elongation index **24.56%**

Comments:

→ Maximum allowable Flakiness & Elongation Index for Dense Graded Bituminous Macadam is 30%

Note:

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**Bangalore-560079.**

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಶೆಟ್ಟಿಹಳ್ಳಿ ಉಪವಿಭಾಗ, ದಾಸರಹಳ್ಳಿ ವಲಯ
ಬೃಹತ್ ಬೆಂಗಳೂರು [illegible]
ಎಸ್.ಎಂ [illegible], ಬೆಂಗಳೂರು

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Job No.: CTCE/BBMP/W.No.12/KRIDL/BC/Stripping/2014-15 06.08.2014

## Stripping Value of Road Aggregates (Static Immersion Test)

IS: 6241

| | |
|---|---|
| **Client** | **Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore. |
| **Agency** | **Technical Manager (West),** KRIDL, Bangalore. |
| **Name of the Work** | Improvements to Main & Cross Roads in Venkateshwara Layout, Gurunanjaiah Layout, Anjaneya Layout, at Abbigere, in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore. |
| **Reference** | BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014 |
| **Type of Mix** | Bituminous Concrete |
| **Date of Testing** | 06.08.2014 |

Type of binder : 60/70

Percentage of binder used : 5.00% by wt.

Total weight of aggregate : 200 g

Total weight of binder : 10.00 g

Temperature of water-bath : 40° C

| Observation Number | Stripping, Percentage | Average, Percentage | Average Retained Coating, % |
|---|---|---|---|
| 1 | 3.1 | 3.20 | 96.80 |
| 2 | 3.2 | | |
| 3 | 3.3 | | |

Comments:

→ Minimum allowable Aggregate retained coating for Bituminous Concrete is 95%

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ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
ಎಸ್.ಎಂ ರಸ್ತೆ, ರವೀಂದ್ರನಗರ, ಬೆಂಗಳೂರು

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**Bangalore-560079.**

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Job No.: CTCE/BBMP/W.No.12/KRIDL/BC/Sp_Wa/2014-15 07.08.2014

## Specific Gravity And Water Absorption Test

IS: 2386 Part III

| | |
|---|---|
| **Client** | **Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore. |
| **Agency** | **Technical Manager (West),** KRIDL, Bangalore. |
| **Name of the Work** | Improvements to Main & Cross Roads in Venkateshwara Layout, Gurunanjaiah Layout, Anjaneya Layout, at Abbigere, in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore. |
| **Reference** | BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014 |
| **Type of Mix** | Bituminous Concrete |
| **Date of Testing** | 07.08.2014 |

| Sl. No. | Details | Notation | Test Number | | | Mean Value |
|---|---|---|---|---|---|---|
| | | | Test 1 | Test 2 | Test 3 | |
| 1 | Weight of aggregate suspended in water with the basket | $W_1$ g | 1997 | 1998 | 1999 | |
| 2 | Weight of basket suspended in water | $W_2$ g | 755 | 755 | 755 | |
| 3 | Weight of saturated aggregate in water | $(W_1 - W_2) = W_s$ g | 1239 | 1238 | 1244 | |
| 4 | Weight of saturated surface dry aggregate in air | $W_3$ g | 2015 | 2016 | 2017 | |
| 5 | Weight of water equal to the volume of the aggregate | $(W_3 - W_S)$ g | 776 | 778 | 773 | |
| 6 | Weight of oven dried aggregate | $W_4$ g | 1999 | 2000 | 2001 | |
| 7 | Specific Gravity | $W_4/(W_3-W_S)$ | 2.576 | 2.571 | 2.589 | 2.578 |
| 8 | Apparent Specific gravity | $W_4/(W_4-W_S)$ | 2.630 | 2.625 | 2.643 | 2.633 |
| 9 | Water Absorption | $((W_3-W_4)*100)/W_4$ | 0.80% | 0.80% | 0.80% | 0.80% |

Comments:

→ Maximum allowable Aggregate Water absorption value for Bituminous Concrete is 2.0%

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JobNo: CTCE/BBMP/W.No.12/KRIDL/BC/Bitumen/2014-15 06.08.2014

## BITUMEN CONTENT DETERMINATION OF BITUMINOUS CONCRETE MIX

**As per IRC:SP:11-1984**

| | |
|---|---|
| CLIENT | **Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore. |
| AGENCY | **Technical Manager (West),** KRIDL, Bangalore. |
| NAME OF THE WORK | Improvements to Main & Cross Roads in Venkateshwara Layout, Gurunanjaiah Layout, Anjaneya Layout, at Abbigere, in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore. |
| REFERENCE | BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014 |
| SAMPLE I/D | Roads inVenkateshwara Layout, Abbigere in Ward No.12, BBMP, Bangalore. |
| DATE OF TESTING | 06.08.2014 |

### BITUMEN CONTENT DETERMINATION

| Description | Trail 1 | Trail 2 |
|---|---|---|
| 1. Weight of Mixture before Test, g | 500 | 500 |
| 2. Weight of Mixture after Test, g | 474 | 473 |
| 3. Weight of Asphalt and Mineral matter Extracted, g | - | - |
| 4. Weight of Mineral Matter, g. | - | - |
| 5. Weight of Ash, g | | |
| 6. Weight of Bitumen Extracted, g. (corrected) | 26 | 27.00 |
| 7. Bitumen content in % | 5.20 | 5.40 |
| 8. Average | **5.30** | |

**Note:**

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ಮಿ.ಆ. ಬ್ಲಾಕ್, ಯಲಹಂಕ, ಬೆಂಗಳೂರು.

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JobNo: CTCE/BBMP/W.No.12/KRIDL/BC/Bitumen/2014-15 06.08.2014

## BITUMEN CONTENT AFTER GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

**As Per IS 2386 and IRC:SP:11-1984**

| | |
|---|---|
| CLIENT | **Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore. |
| AGENCY | **Technical Manager (West),** KRIDL, Bangalore. |
| NAME OF THE WORK | Improvements to Main & Cross Roads in Venkateshwara Layout, Gurunanjaiah Layout, Anjaneya Layout, at Abbigere, in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore. |
| REFERENCE | BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014 |
| SAMPLE I/D | Roads inVenkateshwara Layout, Abbigere in Ward No.12, BBMP, Bangalore. |
| DATE OF TESTING | 06.08.2014 |

**GRADATION AFTER EXTRACTION**

| Sieve Size in mm | Trail 1 | | | | Specified Limits as per MORTH specification table 500-18 (Grading-2) |
|---|---|---|---|---|---|
| | Weight Retained, gm | % Retained | %Cummulative Retained | % Passing | |
| 19 | 0 | 0 | 0 | 100 | 100 |
| 13.2 | 45.25 | 9.55 | 9.55 | 90.45 | 79-100 |
| 9.5 | 36.21 | 7.64 | 17.19 | 82.81 | 70-88 |
| 4.75 | 70.23 | 14.82 | 32.00 | 68.00 | 53-71 |
| 2.36 | 65.22 | 13.76 | 45.76 | 54.24 | 42-58 |
| 1.18 | 49.85 | 10.52 | 56.28 | 43.72 | 34-48 |
| 0.6 | 65.26 | 13.77 | 70.05 | 29.95 | 26-38 |
| 0.3 | 50.28 | 10.61 | 80.65 | 19.35 | 18-28 |
| 0.15 | 32.51 | 6.86 | 87.51 | 12.49 | 12-20 |
| 0.075 | 31.25 | 6.59 | 94.11 | 5.89 | 4-10 |

| Sieve Size in mm | Trail 2 | | | | Specified Limits as per MORTH specification table 500-18 (Grading-2) |
|---|---|---|---|---|---|
| | Weight Retained, gm | % Retained | %Cummulative Retained | % Passing | |
| 19 | 0 | 0 | 0 | 100 | 100 |
| 13.2 | 33.26 | 7.03 | 7.03 | 92.97 | 79-100 |
| 9.5 | 42.52 | 8.99 | 16.02 | 83.98 | 70-88 |
| 4.75 | 74.25 | 15.70 | 31.72 | 68.28 | 53-71 |
| 2.36 | 60.25 | 12.74 | 44.46 | 55.54 | 42-58 |
| 1.18 | 72.32 | 15.29 | 59.75 | 40.25 | 34-48 |
| 0.6 | 41.28 | 8.73 | 68.47 | 31.53 | 26-38 |
| 0.3 | 35.26 | 7.45 | 75.93 | 24.07 | 18-28 |
| 0.15 | 41.25 | 8.72 | 84.65 | 15.35 | 12-20 |
| 0.075 | 36.25 | 7.66 | 92.31 | 7.69 | 4-10 |

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JobNo: CTCE/BBMP/W.No.12/KRIDL/BC/Bitumen/2014-15 07.08.2014

## BITUMEN CONTENT DETERMINATION OF BITUMINOUS CONCRETE MIX

**As per IRC:SP:11-1984**

| | |
|---|---|
| CLIENT | **Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore. |
| AGENCY | **Technical Manager (West),** KRIDL, Bangalore. |
| NAME OF THE WORK | Improvements to Main & Cross Roads in Venkateshwara Layout, Gurunanjaiah Layout, Anjaneya Layout, at Abbigere, in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore. |
| REFERENCE | BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014 |
| SAMPLE I/D | Roads inVenkateshwara Layout, Abbigere in Ward No.12, BBMP, Bangalore. |
| DATE OF TESTING | 07.08.2014 |

### BITUMEN CONTENT DETERMINATION

| Description | Trail 1 | Trail 2 |
|---|---|---|
| 1. Weight of Mixture before Test, g | 500 | 500 |
| 2. Weight of Mixture after Test, g | 474 | 473.5 |
| 3. Weight of Asphalt and Mineral matter Extracted, g | - | - |
| 4. Weight of Mineral Matter, g. | - | - |
| 5. Weight of Ash, g | | |
| 6. Weight of Bitumen Extracted, g. (corrected) | 26 | 26.50 |
| 7. Bitumen content in % | 5.20 | 5.30 |
| 8. Average | **5.25** | |

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JobNo: CTCE/BBMP/W.No.12/KRIDL/BC/Bitumen/2014-15 07.08.2014

## BITUMEN CONTENT AFTER GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

**As Per IS 2386 and IRC:SP:11-1984**

| | |
|---|---|
| CLIENT | **Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore. |
| AGENCY | **Technical Manager (West),** KRIDL, Bangalore. |
| NAME OF THE WORK | Improvements to Main & Cross Roads in Venkateshwara Layout, Gurunanjaiah Layout, Anjaneya Layout, at Abbigere, in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore. |
| REFERENCE | BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014 |
| SAMPLE I/D | Roads inVenkateshwara Layout, Abbigere in Ward No.12, BBMP, Bangalore. |
| DATE OF TESTING | 07.08.2014 |

### GRADATION AFTER EXTRACTION

| Sieve Size in mm | Trail 1 | | | | Specified Limits as per MORTH specification table 500-18 (Grading-2) |
|---|---|---|---|---|---|
| | Weight Retained, gm | % Retained | %Cummulative Retained | % Passing | |
| 19 | 0 | 0 | 0 | 100 | 100 |
| 13.2 | 40.25 | 8.49 | 8.49 | 91.51 | 79-100 |
| 9.5 | 38.52 | 8.13 | 16.62 | 83.38 | 70-88 |
| 4.75 | 72.25 | 15.24 | 31.86 | 68.14 | 53-71 |
| 2.36 | 64.32 | 13.57 | 45.43 | 54.57 | 42-58 |
| 1.18 | 52.32 | 11.04 | 56.47 | 43.53 | 34-48 |
| 0.6 | 62.32 | 13.15 | 69.62 | 30.38 | 26-38 |
| 0.3 | 49.85 | 10.52 | 80.13 | 19.87 | 18-28 |
| 0.15 | 33.25 | 7.01 | 87.15 | 12.85 | 12-20 |
| 0.075 | 36.25 | 7.65 | 94.80 | 5.20 | 4-10 |

| Sieve Size in mm | Trail 2 | | | | Specified Limits as per MORTH specification table 500-18 (Grading-2) |
|---|---|---|---|---|---|
| | Weight Retained, gm | % Retained | %Cummulative Retained | % Passing | |
| 19 | 0 | 0 | 0 | 100 | 100 |
| 13.2 | 30.26 | 6.39 | 6.39 | 93.61 | 79-100 |
| 9.5 | 70.25 | 14.84 | 21.23 | 78.77 | 70-88 |
| 4.75 | 72.32 | 15.27 | 36.50 | 63.50 | 53-71 |
| 2.36 | 58.52 | 12.36 | 48.86 | 51.14 | 42-58 |
| 1.18 | 70.21 | 14.83 | 63.69 | 36.31 | 34-48 |
| 0.6 | 40.25 | 8.50 | 72.19 | 27.81 | 26-38 |
| 0.3 | 34.52 | 7.29 | 79.48 | 20.52 | 18-28 |
| 0.15 | 32.65 | 6.90 | 86.37 | 13.63 | 12-20 |
| 0.075 | 32.21 | 6.80 | 93.18 | 6.82 | 4-10 |

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Job No.: CTCE/BBMP/W.No.12/KRIDL/BC/Agg/2014-15 06.08.2014

## Aggregate Gradation Test

IS : 2386 Part I

| | |
|---|---|
| **Client** | **Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore. |
| **Agency** | **Technical Manager (West),** KRIDL, Bangalore. |
| **Name of theWork** | Improvements to Main & Cross Roads in Venkateshwara Layout, Gurunanjaiah Layout, Anjaneya Layout, at Abbigere, in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore. |
| **Reference** | BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014 |
| **Sample I / D** | Hot Mix Plant, Bangalore |
| **Type of Mix** | Bituminous Concrete |
| **Date of Testing** | 06.08.2014 |

Total Weight of Sample: **5100** gm

| SIEVE SIZE, mm | Weight Retained, gm | % Retained | Cummulative % Retained | % Passing | JOBMIX Gradation as per MORTH | Remarks |
|---|---|---|---|---|---|---|
| 19 | 0 | 0 | 0 | 100 | 100 | Gradation satisfies Bituminous concrete Grade-II specification as per MORTH |
| 13.2 | 585 | 11.47 | 11.47 | 88.53 | 79 - 100 | |
| 9.5 | 480 | 9.41 | 20.88 | 79.12 | 70 - 88 | |
| 4.75 | 625 | 12.25 | 33.14 | 66.86 | 53 - 71 | |
| 2.36 | 515 | 10.10 | 43.24 | 56.76 | 42 - 58 | |
| 1.18 | 625 | 12.25 | 55.49 | 44.51 | 34 - 48 | |
| 0.600 | 530 | 10.39 | 65.88 | 34.12 | 26 - 38 | |
| 0.300 | 550 | 10.78 | 76.67 | 23.33 | 18 - 28 | |
| 0.150 | 435 | 8.53 | 85.20 | 14.80 | 12 - 20 | |
| 0.075 | 500 | 9.80 | 95.00 | 5.00 | 4 - 10 | |

Total Weight of Sample: **5200** gm

| SIEVE SIZE, mm | Weight Retained, gm | % Retained | Cummulative % Retained | % Passing | JOBMIX Gradation as per MORTH | Remarks |
|---|---|---|---|---|---|---|
| 19 | 0 | 0 | 0 | 100 | 100 | Gradation satisfies Bituminous concrete Grade-II specification as per MORTH |
| 13.2 | 600 | 11.54 | 11.54 | 88.46 | 79 - 100 | |
| 9.5 | 475 | 9.13 | 20.67 | 79.33 | 70 - 88 | |
| 4.75 | 635 | 12.21 | 32.88 | 67.12 | 53 - 71 | |
| 2.36 | 510 | 9.81 | 42.69 | 57.31 | 42 - 58 | |
| 1.18 | 630 | 12.12 | 54.81 | 45.19 | 34 - 48 | |
| 0.600 | 575 | 11.06 | 65.87 | 34.13 | 26 - 38 | |
| 0.300 | 480 | 9.23 | 75.10 | 24.90 | 18 - 28 | |
| 0.150 | 425 | 8.17 | 83.27 | 16.73 | 12 - 20 | |
| 0.075 | 485 | 9.33 | 92.60 | 7.40 | 4 - 10 | |

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Job No.: CTCE/BBMP/W.No.12/KRIDL/BC/Agg/2014-15 07.08.2014

## Aggregate Gradation Test

IS : 2386 Part I

| | |
|---|---|
| **Client** | **Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore. |
| **Agency** | **Technical Manager (West),** KRIDL, Bangalore. |
| **Name of theWork** | Improvements to Main & Cross Roads in Venkateshwara Layout, Gurunanjaiah Layout, Anjaneya Layout, at Abbigere, in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore. |
| **Reference** | BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014 |
| **Sample I / D** | Hot Mix Plant, Bangalore |
| **Type of Mix** | Bituminous Concrete |
| **Date of Testing** | 07.08.2014 |

Total Weight of Sample: **5300** gm

| SIEVE SIZE, mm | Weight Retained, gm | % Retained | Cummulative % Retained | % Passing | JOBMIX Gradation as per MORTH | Remarks |
|---|---|---|---|---|---|---|
| 19 | 0 | 0 | 0 | 100 | 100 | Gradation satisfies Bituminous concrete Grade-II specification as per MORTH |
| 13.2 | 625 | 11.79 | 11.79 | 88.21 | 79 - 100 | |
| 9.5 | 580 | 10.94 | 22.74 | 77.26 | 70 - 88 | |
| 4.75 | 615 | 11.60 | 34.34 | 65.66 | 53 - 71 | |
| 2.36 | 525 | 9.91 | 44.25 | 55.75 | 42 - 58 | |
| 1.18 | 635 | 11.98 | 56.23 | 43.77 | 34 - 48 | |
| 0.600 | 540 | 10.19 | 66.42 | 33.58 | 26 - 38 | |
| 0.300 | 555 | 10.47 | 76.89 | 23.11 | 18 - 28 | |
| 0.150 | 450 | 8.49 | 85.38 | 14.62 | 12 - 20 | |
| 0.075 | 480 | 9.06 | 94.43 | 5.57 | 4 - 10 | |

Total Weight of Sample: **5400** gm

| SIEVE SIZE, mm | Weight Retained, gm | % Retained | Cummulative % Retained | % Passing | JOBMIX Gradation as per MORTH | Remarks |
|---|---|---|---|---|---|---|
| 19 | 0 | 0 | 0 | 100 | 100 | Gradation satisfies Bituminous concrete Grade-II specification as per MORTH |
| 13.2 | 685 | 12.69 | 12.69 | 87.31 | 79 - 100 | |
| 9.5 | 530 | 9.81 | 22.50 | 77.50 | 70 - 88 | |
| 4.75 | 645 | 11.94 | 34.44 | 65.56 | 53 - 71 | |
| 2.36 | 525 | 9.72 | 44.17 | 55.83 | 42 - 58 | |
| 1.18 | 650 | 12.04 | 56.20 | 43.80 | 34 - 48 | |
| 0.600 | 600 | 11.11 | 67.31 | 32.69 | 26 - 38 | |
| 0.300 | 470 | 8.70 | 76.02 | 23.98 | 18 - 28 | |
| 0.150 | 430 | 7.96 | 83.98 | 16.02 | 12 - 20 | |
| 0.075 | 515 | 9.54 | 93.52 | 6.48 | 4 - 10 | |

Note:

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# CIVIL-TECH CONSULTANTS AND ENGINEERS

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Job No.: CTCE/BBMP/W.No.12/KRIDL/GSB-1/GR/2014-15 Date : 03.07.2014

## GRADATION FOR GSB-I (CLOSE GRADED)
### IS: 2720 (Part 4)

**Client** : **Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore.

**Agency** : **Technical Manager (West),** KRIDL, Bangalore.

**Name of work** : Improvements to Main & Cross Roads in Venkateshwara Layout, Gurunanjaiah Layout, Anjaneya Layout, at Abbigere, in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore.

**Reference** : BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014.

**Date of Testing** : 03.07.2014

**Sample Source** : GSB Mix Plant Bangalore. **Oven Dry Wt (gm) :** 25500

| Is Sieve Size in mm | Weight Retained (gm) | Cumulative Weight Retained (gm) | Cumulative % of Retained | Cumulative % of Passing | Specified Limits |
|---|---|---|---|---|---|
| 75.0 | 0 | 0 | 0.00 | 0 | 100 |
| 53.0 | 1250 | 1250 | 4.90 | 95.10 | 80-100 |
| 26.50 | 6450 | 7700 | 30.20 | 69.80 | 55-90 |
| 9.50 | 4050 | 11750 | 46.08 | 53.92 | 35-65 |
| 4.75 | 3585 | 15335 | 60.14 | 39.86 | 25-55 |
| 2.36 | 2510 | 17845 | 69.98 | 30.02 | 20-40 |
| 0.425 | 4230 | 22075 | 86.57 | 13.43 | 10-25 |
| 0.075 | 2325 | 24400 | 95.69 | 4.31 | 3-10 |
| PAN | 1100 | | | | |
| Total | 25500 | | | | |

**Remarks:** Satisfies MORTH Specifications as per Table 400-1, Grading I

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ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

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Job No.: CTCE/BBMP/W.No.12/KRIDL/GSB-1/AL/2014-15 Date : 03.07.2014

## ATTERBERG LIMITS TEST FOR GSB (CLOSE GRADED)

**IS : 2720 (Part - 5)**

**Client** : **Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore.

**Agency** : **Technical Manager (West),** KRIDL, Bangalore.

**Name of work** : Improvements to Main & Cross Roads in Venkateshwara Layout, Gurunanjaiah Layout, Anjaneya Layout, at Abbigere, in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore.

**Reference** : BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014

**Date of Testing** : 03.07.2014

As per MORTH Table : 400-11

| Sl. No. | Particulars | Test Results | Standards as per Specifications |
|---|---|---|---|
| 1 | Liquid Limit, % | 22.00 | 25.0% Maximum. |
| 2 | Plasticity Index, % | Non Plastic | 6.0% Maximum. |

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*QUALITY CONTROL REPORTS FOR*

**WE MIX MACADAM(WMM)**

# CIVIL-TECH CONSULTANTS AND ENGINEERS

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Job No.: CTCE/BBMP/W.No.12/KRIDL/WMM/Gradation/2014-15 14.07.201

## GRADATION FOR WMM
## MORTH TABLE-400-11

**Client** : **Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore.

**Agency** : **Technical Manager (West),** KRIDL, Bangalore.

**Name of Work** : Improvements to Main & Cross Roads in Venkateshwara Layout, Gurunanjaiah Layout, Anjaneya Layout, at Abbigere, in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore.

**Reference** : BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014

Date of Testing : 14.07.2014

Material : WMM

Sample Location : WMM Mix Plant Oven Dry Wt (gm): **26100**

| Is Sieve Size in mm | Weight Retained (gm) | Cumulative Weight Retained (gm) | Cumulative % of Retained | Cumulative % of Passing | Spec.Limits |
|---|---|---|---|---|---|
| 53 | 0 | 0 | 0 | 100 | 100 |
| 45 | 855 | 855 | 3.3 | 96.7 | 95-100 |
| 22.4 | 5215 | 6070 | 23.3 | 76.7 | 60-80 |
| 11.2 | 5300 | 11370 | 43.6 | 56.4 | 40-60 |
| 4.75 | 4985 | 16355 | 62.7 | 37.3 | 25-40 |
| 2.36 | 3800 | 20155 | 77.2 | 22.8 | 15-30 |
| 0.600 | 2350 | 22505 | 86.2 | 13.8 | 8-22 |
| 0.075 | 2395 | 24900 | 95.4 | 4.6 | 0-8 |

**Note:**

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Job No.: CTCE/BBMP/W.No.12/KRIDL/WMM/Gradation/2014-15 14.07.2014

## GRADATION FOR WMM
## MORTH TABLE-400-11

**Client** : **Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore.

**Agency** : **Technical Manager (West),** KRIDL, Bangalore.

**Name of Work** : Improvements to Main & Cross Roads in Venkateshwara Layout, Gurunanjaiah Layout, Anjaneya Layout, at Abbigere, in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore.

**Reference** : BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014

Date of Testing : 14.07.2014

Material : WMM

Sample Location : WMM Mix Plant Oven Dry Wt (gm): **27500**

| Is Sieve Size in mm | Weight Retained (gm) | Cumulative Weight Retained (gm) | Cumulative % of Retained | Cumulative % of Passing | Spec.Limits |
|---|---|---|---|---|---|
| 53 | 0 | 0 | 0 | 100 | 100 |
| 45 | 980 | 980 | 3.6 | 96.4 | 95-100 |
| 22.4 | 6000 | 6980 | 25.4 | 74.6 | 60-80 |
| 11.2 | 5500 | 12480 | 45.4 | 54.6 | 40-60 |
| 4.75 | 5000 | 17480 | 63.6 | 36.4 | 25-40 |
| 2.36 | 3845 | 21325 | 77.5 | 22.5 | 15-30 |
| 0.600 | 2350 | 23675 | 86.1 | 13.9 | 8-22 |
| 0.075 | 2625 | 26300 | 95.6 | 4.4 | 0-8 |

Note:

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ಬೃಹತ್ ಬೆಂಗಳೂರು
ಎಸ್.ಎಂ. ರಸ್ತೆ, ರಮಣಶ್ರೀನಗರ, ಬೆಂಗಳೂರು

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Job No.: CTCE/BBMP/W.No.12/KRIDL/WMM/AIV/2014-15 14.07.2014

## Aggregate Impact Value

IS: 2386 Part IV

| | |
|---|---|
| **Client** | **Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore. |
| **Agency** | **Technical Manager (West),** KRIDL, Bangalore. |
| **Name of the Work** | Improvements to Main & Cross Roads in Venkateshwara Layout, Gurunanjaiah Layout, Anjaneya Layout, at Abbigere, in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore. |
| **Reference** | BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014 |
| **Source / Location** | WMM Plant |
| **Type of Mix** | Wet Mix macadam |
| **Date of Testing** | 14.07.2014 |

| Sl No. | Details | Trial No. | | Average |
|---|---|---|---|---|
| | | 1 | 2 | |
| 1 | Total weight of aggregate sample filling the cylindrical measure = $W_1$ g | 385 | 386 | |
| 2 | Weight of agregate passing 2.36 mm sieve after the test = $W_2$ g | 85 | 86 | |
| 3 | Weight of aggregate retained 2.36 mm sieve after the test = $W_3$ g | 300 | 300 | |
| 4 | Aggregate Impact value = percent fines | 22.08 | 22.28 | |
| | 100* ($W_2/W_1$)% | | | 22.18 |

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

**Note:**

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Job No.: CTCE/BBMP/W.No.12/KRIDL/WMM/AIV/2014-15

14.07.2014

## Aggregate Impact Value

IS: 2386 Part IV

| | |
|---|---|
| **Client** | **Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore. |
| **Agency** | **Technical Manager (West),** KRIDL, Bangalore. |
| **Name of the Work** | Improvements to Main & Cross Roads in Venkateshwara Layout, Gurunanjaiah Layout, Anjaneya Layout, at Abbigere, in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore. |
| **Reference** | BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014 |
| **Source / Location** | WMM Plant |
| **Type of Mix** | Wet Mix macadam |
| **Date of Testing** | 14.07.2014 |

| Sl No. | Details | Trial No. 1 | Trial No. 2 | Average |
|---|---|---|---|---|
| 1 | Total weight of aggregate sample filling the cylindrical measure = $W_1$ g | 379 | 380 | |
| 2 | Weight of agregate passing 2.36 mm sieve after the test = $W_2$ g | 79 | 80 | |
| 3 | Weight of aggregate retained 2.36 mm sieve after the test = $W_3$ g | 300 | 300 | |
| 4 | Aggregate Impact value = percent fines | 20.84 | 21.05 | |
| | 100* ($W_2/W_1$)% | | | 20.95 |

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

**Note:**

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ಶೆಟ್ಟಿಹಳ್ಳಿ ಉಪವಿಭಾಗ, ದಾಸರಹಳ್ಳಿ ವಲಯ

ಬೃಹತ್ ಬೆಂಗಳೂರು

ಪಾಲಿಕೆ

ಎಸ್.ಎಂ ರಸ್ತೆ, ಮಲ್ಲೇಶ್ವರಂ, ಬೆಂಗಳೂರು

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